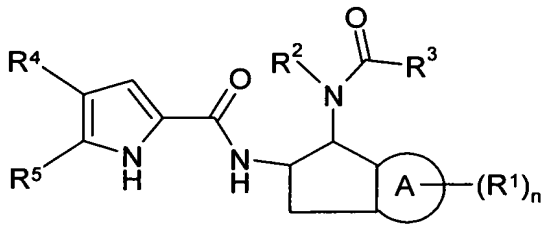
In the Claims

The listing of claims will replace all prior versions and listings of claims in the application.

Listings of claims

1. (original) A compound of formula (1):



(1)

wherein:

R^4 and R^5 together are either –S-C(R^6)=C(R^7)- or –C(R^7)=C(R^6)-S- ;

R^6 and R^7 are independently selected from hydrogen, halo, nitro, cyano, hydroxy, fluoromethyl, difluoromethyl, trifluoromethyl, trifluoromethoxy, carboxy, carbamoyl, (1-4C)alkyl, (2-4C)alkenyl, (2-4C)alkynyl, (1-4C)alkoxy and (1-4C)alkanoyl;

A is phenylene or heteroarylene;

n is 0, 1 or 2;

R^1 is independently selected from halo, nitro, cyano, hydroxy, carboxy, carbamoyl, *N*-(1-4C)alkylcarbamoyl, *N*,*N*-((1-4C)alkyl)$_2$carbamoyl, sulphamoyl, *N*-(1-4C)alkylsulphamoyl, *N*,*N*-((1-4C)alkyl)$_2$sulphamoyl, -S(O)$_b$(1-4C)alkyl (wherein b is 0,1,or 2), -OS(O)$_2$(1-4C)alkyl, (1-4C)alkyl, (2-4C)alkenyl, (2-4C)alkynyl, (1-4C)alkoxy, (1-4C)alkanoyl, (1-4C)alkanoyloxy, hydroxy(1-4C)alkyl, fluoromethyl, difluoromethyl, trifluoromethyl, trifluoromethoxy and –NHSO$_2$(1-4C)alkyl;

or, when n is 2, the two R^1 groups, together with the carbon atoms of A to which they are attached, may form a 4 to 7 membered saturated ring, optionally containing 1 or 2 heteroatoms independently selected from O, S and N, and optionally being substituted by one or two methyl groups;

one of R^2 and R^3 is selected from R_Na, and the other is selected from R_Nb;

R_Na: (1-3C)alkyl, halo(1-3C)alkyl, dihalo(1-3)alkyl, trifluoromethyl, hydroxy(1-3C)alkyl, dihydroxy(2-3C)alkyl, cyano(1-3C)alkyl (optionally substituted on alkyl with hydroxy), methoxymethyl, ethoxymethyl, methoxyethyl, methoxymethoxymethyl, dimethoxyethyl, (hydroxy)(methoxy)ethyl, 5- and 6-membered acetals and mono- and di-methyl derivatives thereof, (amino)(hydroxy)(2-3C)alkyl, (aminocarbonyl)(hydroxy)(2-3C)alkyl, (methylaminocarbonyl)(hydroxy)(2-3C)alkyl, (dimethylaminocarbonyl)(hydroxy)(2-3C)alkyl,

(methylcarbonylamino)(hydroxy)(2-3C)alkyl, (methylS(O)$_p$-)(hydroxy)(2-3C)alkyl (wherein p is 0, 1 or 2);

R_Nb: (1-4C)alkyl, halo(1-4C)alkyl, dihalo(1-4C)alkyl, trifluoromethyl, hydroxy(1-4C)alkyl, dihydroxy(2-4C)alkyl, trihydroxy(3-4C)alkyl, cyano(1-4C)alkyl (optionally substituted on alkyl with hydroxy), (1-4C)alkoxy(1-4C)alkyl, (1-4C)alkoxy(1-4C)alkoxy(1-4C)alkyl, di[(1-4C)alkoxy](2-4C)alkyl, (hydroxy)[(1-4C)alkoxy](2-4C)alkyl, 5- and 6-membered acetals and mono- and di-methyl derivatives thereof, (amino)(hydroxy)(2-4C)alkyl, (aminocarbonyl)(hydroxy)(2-4C)alkyl, ((1-4C)alkylaminocarbonyl)(hydroxy)(2-4C)alkyl, (di(1-4C)alkylaminocarbonyl)(hydroxy)(2-4C)alkyl, ((1-4C)alkylcarbonylamino)(hydroxy)(2-4C)alkyl, ((1-4C)alkylS(O)$_p$-)(hydroxy)(2-4C)alkyl (wherein p is 0, 1 or 2);

wherein any alkyl or alkoxy group within any group in R_NA and R_NB may also optionally be substituted on an available carbon atom with a hydroxy group (provided that said carbon atom is not already substituted by a group linked by a heteroatom);

provided that if R^2 is (1-3C)alkyl or (1-4C)alkyl then R^3 is not (1-4C)alkyl or (1-3C)alkyl;

or a pharmaceutically acceptable salt or pro-drug thereof.

2. (original) A compound of formula (1) as claimed in Claim 1, or a pharmaceutically acceptable salt or pro-drug thereof, wherein R^2 is selected from R_Na, and R^3 is selected from R_Nb, wherein R_Na and R_Nb are as defined in Claim 1.

3. (currently amended) A compound of formula (1) as claimed in Claim 1 ~~or Claim 2~~, or a pharmaceutically acceptable salt or pro-drug thereof, wherein A is phenylene.

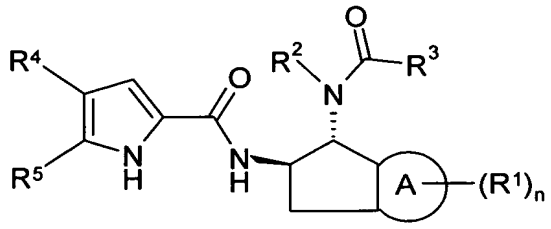
4. (currently amended) A compound of formula (1) as claimed in Claim 1~~, 2 or 3~~, or a pharmaceutically acceptable salt or pro-drug thereof, wherein n is 0.

5. (currently amended) A compound of formula (1) as claimed in ~~any one of~~ Claim[[s]] 1 ~~to 4~~, or a pharmaceutically acceptable salt or pro-drug thereof, wherein R^6 and R^7 are independently selected from hydrogen and halo.

6. (currently amended) A compound of formula (1) as claimed in ~~any one of~~ Claim[[s]] 1 ~~to 4~~, or a pharmaceutically acceptable salt or pro-drug thereof, wherein R^6 and R^7 are independently selected from hydrogen and chloro.

7. (currently amended) A compound of formula (1) as claimed in ~~any one of~~ Claim[[s]] 1 ~~to 6~~, or a pharmaceutically acceptable salt or pro-drug thereof, wherein R_Na is selected from (1-4C)alkyl, hydroxy(1-4C)alkyl, and (1-4C)alkoxy(1-4C)alkyl.

8. (currently amended) A compound of formula (1) as claimed in ~~any one of~~ Claim[[s]] 1 ~~to 7~~, or a pharmaceutically acceptable salt or pro-drug thereof, which is a compound of formula (1A):



(1A)

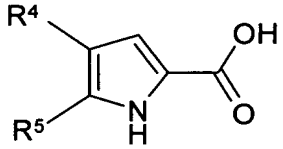
wherein R^1 to R^7 and n are as defined in ~~any one of~~ claim[[s]] 1 ~~to 7~~.

9. (currently amended) A pro-drug of a compound of formula (1) as claimed in ~~any one of~~ Claim[[s]] 1 ~~to 8~~, which pro-drug is an in-vivo hydrolysable ester.

10. (original) A pharmaceutical composition which comprises a compound of the formula (1), or a pharmaceutically acceptable salt or in-vivo hydrolysable ester thereof, as claimed in claim 1 in association with a pharmaceutically-acceptable diluent or carrier.

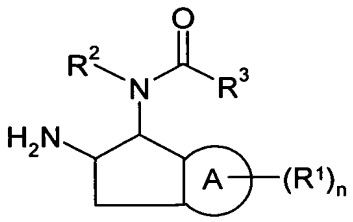
11-15. (cancelled)

16. (original) A process for the preparation of a compound of formula (1) as claimed in claim 1, which process comprises:
reacting an acid of the formula (2):



(2)

or an activated derivative thereof; with an amine of formula (3):



(3)

and thereafter if necessary:

i) converting a compound of the formula (1) into another compound of the formula (1);

ii) removing any protecting groups;

iii) forming a pharmaceutically acceptable salt or *in vivo* hydrolysable ester.

17. (new) A compound of formula (1), or a pharmaceutically acceptable salt or pro-drug thereof, selected from:

2-chloro-*N*-{(1*R*,2*R*)-1-[(methoxyacetyl)(methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-6*H*-thieno[2,3-*b*]pyrrole-5-carboxamide;

2-chloro-*N*-{(1*R*,2*R*)-1-[[3-hydroxy-2-(hydroxymethyl)propanoyl](methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-6*H*-thieno[2,3-*b*]pyrrole-5-carboxamide;

ethyl 3-[((1*R*,2*R*)-2-{[(2-chloro-6*H*-thieno[2,3-*b*]pyrrol-5-yl)carbonyl]amino}-2,3-dihydro-1*H*-inden-1-yl)(methyl)amino]-3-oxopropanoate;

2-[((1*R*,2*R*)-2-{[(2-chloro-6*H*-thieno[2,3-*b*]pyrrol-5-yl)carbonyl]amino}-2,3-dihydro-1*H*-inden-1-yl)(methyl)amino]-2-oxoethyl acetate;

2-chloro-*N*-{(1*R*,2*R*)-1-[glycoloyl(methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-6*H*-thieno[2,3-*b*]pyrrole-5-carboxamide;

2-chloro-*N*-{(1*R*,2*R*)-1-[glyceroyl(methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-6*H*-thieno[2,3-*b*]pyrrole-5-carboxamide;

2-chloro-*N*-{(1*R*,2*R*)-1-[[(2*S*)-2,3-dihydroxypropanoyl](methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-6*H*-thieno[2,3-*b*]pyrrole-5-carboxamide;

2-chloro-*N*-{(1*R*,2*R*)-1-[[(2*R*)-2,3-dihydroxypropanoyl](methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-6*H*-thieno[2,3-*b*]pyrrole-5-carboxamide;

2-chloro-*N*-{(1*R*,2*R*)-1-[(3-hydroxypropanoyl)(methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-6*H*-thieno[2,3-*b*]pyrrole-5-carboxamide;

2-chloro-*N*-{(1*R*,2*R*)-1-[glycoloyl(2-hydroxyethyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-6*H*-thieno[2,3-*b*]pyrrole-5-carboxamide;

2-chloro-*N*-{(1*R*,2*R*)-1-[[(2*R*)-2-hydroxypropanoyl](methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-6*H*-thieno[2,3-*b*]pyrrole-5-carboxamide;

2-chloro-*N*-{(1*R*,2*R*)-1-[[(2*S*)-2-hydroxypropanoyl](methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-6*H*-thieno[2,3-*b*]pyrrole-5-carboxamide;

2,3-dichloro-*N*-{(1*R*,2*R*)-1-[[(2*R*)-2,3-dihydroxypropanoyl](methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-4*H*-thieno[3,2-*b*]pyrrole-5-carboxamide

2,3-dichloro-*N*-{(1*R*,2*R*)-1-[[(2*S*)-2,3-dihydroxypropanoyl](methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-4*H*-thieno[3,2-*b*]pyrrole-5-carboxamide;

(2*S*)-N^1-((1*R*,2*R*)-2-{[(2-chloro-6*H*-thieno[2,3-*b*]pyrrol-5-yl)carbonyl]amino}-2,3-dihydro-1*H*-inden-1-yl)-2-hydroxy-N^1-methylsuccinamide;

(2*S*)-N^1-((1*R*,2*R*)-2-{[(2,3-dichloro-4*H*-thieno[3,2-*b*]pyrrol-5-yl)carbonyl]amino}-2,3-dihydro-1*H*-inden-1-yl)-2-hydroxy-N^1-methylsuccinamide;

2,3-dichloro-*N*-{(1*R*,2*R*)-1-[[(2*S*)-2-hydroxybutanoyl](methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-4*H*-thieno[3,2-*b*]pyrrole-5-carboxamide;

2,3-dichloro-*N*-{(1*R*,2*R*)-1-[[(2*S*)-2-hydroxy-3-methylbutanoyl](methyl) amino]-2,3-dihydro-1*H*-inden-2-yl}-4*H*-thieno[3,2-*b*]pyrrole-5-carboxamide;

2,3-dichloro-*N*-{(1*R*,2*R*)-1-[[(2*S*)-4-(1,3-dioxo-1,3-dihydro-2*H*-isoindol-2-yl)-2-hydroxy butanoyl](methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-4*H*-thieno[3,2-*b*]pyrrole-5-carboxamide;

2,3-dichloro-*N*-{(1*R*,2*R*)-1-[[(2*R*)-2-hydroxy-3-(methylthio)propanoyl](methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-4*H*-thieno[3,2-*b*]pyrrole-5-carboxamide;

tert-butyl {(2*S*)-3-[((1*R*,2*R*)-2-{[(2,3-dichloro-4*H*-thieno[3,2-*b*]pyrrol-5-yl)carbonyl]amino}-2,3-dihydro-1*H*-inden-1-yl)(methyl)amino]-2-hydroxy-3-oxopropyl}carbamate;

2,3-dichloro-*N*-{(1*R*,2*R*)-1-[[(2*S*)-3-cyano-2-hydroxypropanoyl](methyl) amino]-2,3-dihydro-1*H*-inden-2-yl}-4*H*-thieno[3,2-*b*]pyrrole-5-carboxamide;

N-{(1*R*,2*R*)-1-[(*N*-acetylseryl)(methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-2-chloro-6*H*-thieno[2,3-*b*]pyrrole-5-carboxamide;

N-{(1*R*,2*R*)-1-[(*N*-acetylseryl)(methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-2,3-dichloro-4*H*-thieno[3,2-*b*]pyrrole-5-carboxamide;

2,3-dichloro-*N*-{(1*R*,2*R*)-1-[methyl(L-seryl)amino]-2,3-dihydro-1*H*-inden-2-yl}-4*H*-thieno[3,2-*b*]pyrrole-5-carboxamide hydrochloride;

2-chloro-*N*-{(1*R*,2*R*)-1-[methyl(L-seryl)amino]-2,3-dihydro-1*H*-inden-2-yl}-6*H*-thieno[2,3-*b*]pyrrole-5-carboxamide hydrochloride;

(2*S*)-N^1-((1*R*,2*R*)-2-{[(2-chloro-6*H*-thieno[2,3-*b*]pyrrol-5-yl)carbonyl]amino}-2,3-dihydro-1*H*-inden-1-yl)-2-hydroxy-N^1-methylpentanediamide;

(2*S*)-N^1-((1*R*,2*R*)-2-{[(2,3-dichloro-4*H*-thieno[3,2-*b*]pyrrol-5-yl)carbonyl]amino}-2,3-dihydro-1*H*-inden-1-yl)-2-hydroxy-N^1-methylpentanediamide;

2-chloro-*N*-{(1*R*,2*R*)-1-[[(2*S*)-2-hydroxy-3-methoxypropanoyl](methyl) amino]-2,3-dihydro-1*H*-inden-2-yl}-6*H*-thieno[2,3-*b*]pyrrole-5-carboxamide;

2,3-dichloro-*N*-{(1*R*,2*R*)-1-[[(2*S*)-2-hydroxy-3-methoxypropanoyl](methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-4*H*-thieno[3,2-*b*]pyrrole-5-carboxamide;
2,3-dichloro-*N*-{(1*R*,2*R*)-1-[[(2*R*)-2-hydroxy-3-(methylsulfonyl)propanoyl] (methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-4*H*-thieno[3,2-*b*]pyrrole-5-carboxamide;
N-{(1*R*,2*R*)-1-[[(2*S*)-3-amino-2-hydroxypropanoyl](methyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-2,3-dichloro-4*H*-thieno[3,2-*b*]pyrrole-5-carboxamide hydrochloride;
(2*S*)-N^1-((1*R*,2*R*)-2-{[(2,3-dichloro-4*H*-thieno[3,2-*b*]pyrrol-5-yl)carbonyl]amino}-2,3-dihydro-1*H*-inden-1-yl)-2-hydroxy-N^1,N^4-dimethylsuccinamide;
(2*S*)-N^1-((1*R*,2*R*)-2-{[(2,3-dichloro-4*H*-thieno[3,2-*b*]pyrrol-5-yl)carbonyl] amino}-2,3-dihydro-1*H*-inden-1-yl)-2-hydroxy-N^1,N^4,N^4-trimethylsuccinamide;
2-chloro-*N*-{(1*R*,2*R*)-1-[glyceroyl(2-hydroxyethyl)amino]-2,3-dihydro-1*H*-inden-2-yl}-6*H*-thieno[2,3-*b*]pyrrole-5-carboxamide;
2-chloro-*N*-{(1*R*,2*R*)-1-[[(2*R*)-2,3-dihydroxypropanoyl](2-hydroxyethyl) amino]-2,3-dihydro-1*H*-inden-2-yl}-6*H*-thieno[2,3-*b*]pyrrole-5-carboxamide;
2-chloro-*N*-{(1*R*,2*R*)-1-[[(2*S*)-2,3-dihydroxypropanoyl](2-hydroxyethyl) amino]-2,3-dihydro-1*H*-inden-2-yl}-6*H*-thieno[2,3-*b*]pyrrole-5-carboxamide.

18. (new) A method of producing a glycogen phosphorylase inhibitory effect in a warm-blooded animal, such as man, in need of such treatment which comprises administering to said animal an effective amount of a compound of formula (1) as claimed in claim 1.

19. (new) A method of treating type 2 diabetes, insulin resistance, syndrome X, hyperinsulinaemia, hyperglucagonaemia, cardiac ischaemia or obesity in a warm-blooded animal, such as man, in need of such treatment which comprises administering to said animal an effective amount of a compound of formula (1) as claimed in claim 1.

20. (new) A method of treating type 2 diabetes in a warm-blooded animal, such as man, in need of such treatment which comprises administering to said animal an effective amount of a compound of formula (1) as claimed in claim 1.